

REMARKS

In response to the action, Applicant has amended claims 1, 6 and 10. Applicant respectfully requests reconsideration in view of the amendments and following remarks.

Applicant has amended claims 1, 6 and 10 to include the polishing pad having a rotational axis to clarify that the claims are directed to a pad that rotates in a single plane, such as a circular pad. Paragraph 23, lines 2 to 5 provide a basis for the limitation. Furthermore, Applicant has amended claims 1, 6 and 10 to include the limitation that the first plurality of grooves terminate within the polishing region radially inward of the outer peripheral edge and radially outward of the rotational axis. These amendments clarify that grooves of the first plurality do not create a continuous channel from the central region through the polishing region to the outer peripheral edge of the polishing pad. Support for the amendments is found at paragraphs 23, lines 1 and 2, and the last three lines of paragraph 22 of the specification and rotational axis 234 of the drawing. Applicant respectfully submits that these amendments enter no new matter.

The action rejected claims 1-4 and 6-10 under 35 U.S.C. § 102 (b) as being anticipated by Robinson et al., 5,990,012 (“Robinson”). In particular, the action relied upon Robinson’s Figure 7 disclosing a polishing pad having a first set of grooves or channels wherein the first set of grooves has a first end in the central region and a second end within the polishing region because the entire pad could be used for polishing. Unlike the claimed invention, these grooves all have second ends that terminate in the outer peripheral edge. Robinson does not disclose or suggest a planar pad having a first plurality of grooves wherein the grooves of the first plurality have a first end in the central region and a second end located in the polishing region, radially inward of the outer peripheral edge and radially outward of its rotational axis. The claimed discontinuous first set and second set of grooves can improve slurry utilization during chemical mechanical

polishing of semiconductor substrates. Thus, since Robinson does not disclose or suggest a planar pad having first plurality of grooves having a second end located in the polishing region, radially inward of the outer peripheral edge and radially outward of its rotational axis, Applicant respectfully submits that claims 1-4 and 6-10 are not anticipated by Robinson under 35 U.S.C. § 102 (b).

The action rejected claim 5 under 35 U.S.C. § 103 (a) as being obvious in view of Robinson and Burke et al., 5,645,469 (“Burke”). In particular the action relied on Robinson anticipating all the limitations of claim 5 except for a plurality of branching grooves, and Burke teaching a plurality of branching grooves (26) connecting radial grooves. As above, Applicant submits that Robinson does not anticipate or suggest the limitations of claim 5. Additionally, Burke does not disclose or suggest a plurality of sets of branching grooves, each set located within the polishing region and having an end in fluid communication with a corresponding respective groove of a first plurality of grooves. Thus, since Burke fails to disclose or suggest the branching grooves defined by claim 5, and Robinson fails to disclose or suggest the other limitations of claim 5, Applicant respectfully submits that claim 5 is patentable over the combined references.

The action rejected claims 1-4 and 6-10 under the judicially created doctrine of double patenting in view of claims 1-10 of Muldowney, 6,843,711 (“the ’711 patent”). In particular the rejection relies upon the ’711 patent anticipating the claimed invention. The amended claims require 1) a first plurality of grooves having a first end in the central region and a second end located in the polishing region, radially inward of the outer peripheral edge and radially outward of its rotational axis; and 2) a second plurality of grooves spaced from the first plurality of grooves that terminate in the outer peripheral edge or radially outward from the polishing region.

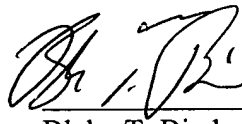
The '711 patent does not appear to disclose these limitations. Furthermore, since the claimed discontinuous first set and second set of grooves can improve slurry utilization during chemical mechanical polishing of semiconductor substrates, they are patentably distinct from the '711 patent. Thus, since the claims of the '711 patent does not anticipate the amended claims, the claims of the '711 patent are patentably distinct, Applicant respectfully submits that the double patenting rejection is improper for claims 1-10, as amended.

The action rejected claim 5 under the judicially created doctrine of obviousness-type double patenting in view of claims 1-10 of the '711 patent and Burke. In particular the rejection relied on Burke disclosing a plurality of branching grooves and the '711 patent anticipating the other limitations of claim 5. Burke does not disclose a plurality of branching grooves located entirely within the polishing region and having an end in fluid communication with a corresponding groove of the first plurality. In addition, the claimed subject matter of the present invention is not anticipated by and patentably distinct from the '711 patent. Applicant, therefore, respectfully submits that claim 5 is patentable over the claims of the '711 patent in view of Burke under the judicially created doctrine of obviousness-type double patenting.

Applicant believes that the amended application is in condition for allowance and respectfully requests reconsideration. Please call Applicant's Attorney at (302) 283-2136 if a call would expedite prosecution.

Respectfully submitted,


Date



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